Southwest Region, Area 3

Integrated Roadside Vegetation Management Plan

2009

Washington State Department of Transportation
Maintenance and Operations Division

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Summary

This plan explains the Washington State Department of Transportation's (WSDOT) policy and practice for maintenance of roadside vegetation for Maintenance Area 3 within the agency's Southwest Region. This area manages vegetation within approximately 215 miles of state highway corridor, primarily in Pacific and Wahkiakum Counties. Highways in the area are mostly rural and forested, with a number of small towns and associated semi-urban classification. All highways in the area are high in scenic quality, and tourism is a major component of the local economy. A map of the area is included as **Figure 1** on the following page.

The primary objectives in maintenance of roadside vegetation within the area are in relation to safety of the highway users, preservation of the highway infrastructure, and control of legally designated noxious weeds where they occur on the right of way. Other considerations include protection and preservation of natural environment, preserving and enhancing the natural scenic quality of the roadside, and being a good neighbor to the many adjoining property owners. In all cases, roadside vegetation maintenance activities are planned and conducted in a way that discourages or eliminates unwanted vegetation and promotes desirable vegetation. This is the basic premise of Integrated Vegetation Management (IVM) and the foundation of the program.

This document and associated information management tools serve as the primary reference for maintenance of roadside vegetation in the area. Included is detailed information on agency, region, and area policies along with locations for planned routine maintenance practices, reoccurring weed infestations, sensitive areas, and other areas with special management considerations. Also included are guidelines and prescriptions for best management practices in dealing with roadside vegetation problems and opportunities. In effect, this plan supports WSDOT's compliance with state law (RCW 17.15) by implementing the principles of Integrated Pest Management for the management of roadside vegetation. It also supports WSDOT's long-range goals for the management of roadsides to:

- Create naturally stable, sustainable plant communities
- Improve effectiveness and efficiency in the control of weeds and unwanted trees and brush
- Reduce maintenance cost and herbicide use over time

This plan is organized around the major categories of roadside vegetation maintenance work. The major categories include: Zone 1 (or pavement edge maintenance), Routine Mowing, Noxious Weed Control, Nuisance Weed Control, Tree and Brush Control, and Special Maintenance Areas.

The management of roadside vegetation is a dynamic process and it is intended that this plan be continuously adapted over time based on input from a variety of sources. An integral component of the process is a database for recording IVM treatments for specific vegetation controls and locations, and to record information on follow up evaluation on these treatments. Annual area meetings will be held to discuss what is learned each year and refine the plan over time.

WSDOT is also requesting that local public and private entities with an interest in weed control and roadside vegetation management provide input on the plan and cooperate in efforts where appropriate. Additional copies of the draft plan are available online: www.wsdot.wa.gov/maintenance/vegetation/mgmt_plans.htm, hard copies can also be provided upon request. Please contact Gene Dotson or Ray Willard at the numbers listed below for questions or comments:

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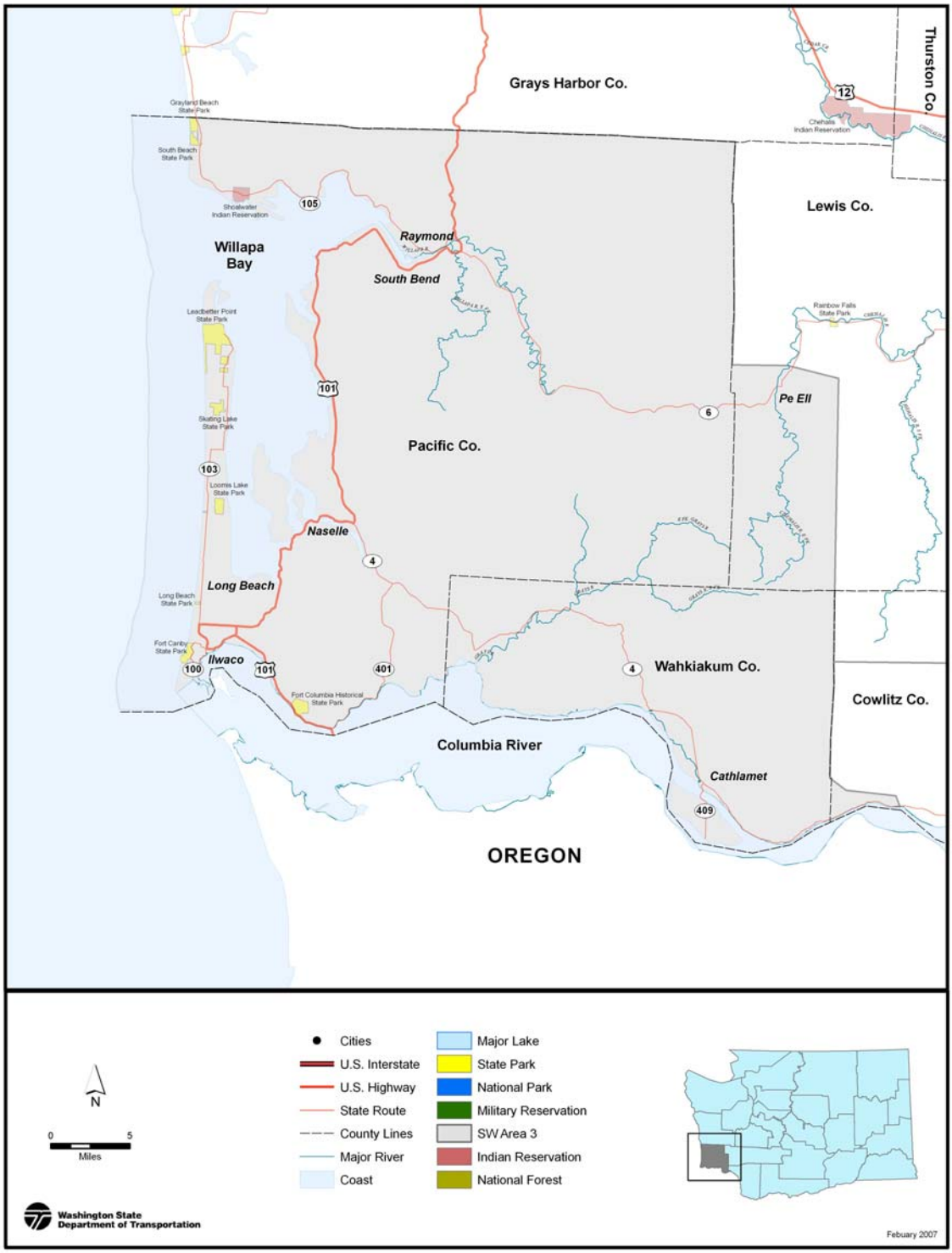


SW Region, Area 3 Map
Figure 1

Roadside Management Considerations

The primary objectives for maintenance of roadside vegetation are to provide for safe highway operation and to comply with legal regulations for control of noxious weeds and protection of the environment. Overall WSDOT maintenance policy and procedures for roadside vegetation are defined in Chapter 6 of the WSDOT Maintenance Manual (M51-01, March 2002) www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/MaintenanceManual.pdf

Visual Quality
It is also important to maintain appropriate visual standards in the appearance of the roadside. This is particularly important in Area 3, with much of the local economy dependent on the tourist industry. All maintenance activities will be conducted in a way that minimizes visual impacts such as wide spread "brown-out" from herbicides or shattered limbs from side trimming. Roadsides should look as natural as possible throughout the year. Appropriate visual quality for roadsides throughout the state is defined in the WSDOT Roadside Classification Plan (June 1996) www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/RCP.pdf

Operational Zones
WSDOT roadsides are divided into several zones for the purposes of assigning management objectives, maintenance needs, and thresholds for triggering vegetation maintenance actions. Noxious weed species designated for control by state and county law are controlled throughout all zones. Not all management zones occur along all state highways. In some cases the narrow width of the right-of-way or adjoining land-use, limits the operational zones to Zone 1 and/or a narrow Zone 2 only. Roadside vegetation management zones are illustrated in **Figure 2** below and defined as follows:

> **Zone 1** – A vegetation free gravel shoulder, where needed, is maintained as a one to three-foot wide strip to provide for key maintenance, operational, safety, and pavement and guardrail preservation needs. Zone 1 is typically maintained with an annual application of herbicides.
>
> **Zone 2** – The operational zone extends from the edge of Zone 1 or the pavement edge (if Zone 1 is not present) to a width necessary to provide for safe errant vehicular recovery, maintain sight distance at corners and intersections, and provide for other operational, safety, and environmental functions. Zone 2 is typically maintained by mowing a single pass adjacent to the pavement and through selective removal of unwanted trees and brush beyond the mowing strip.
>
> **Zone 3** – In areas with sufficient right-of-way width, a buffer or transition zone extends from Zone 2 to the right-of-way line to provide a buffer or transitional area between the highway facility and adjacent land uses. This area is maintained selectively, and to the greatest degree possible as a self-sustaining plant community, to minimize erosion as well as the growth of weeds and undesirable trees and brush.

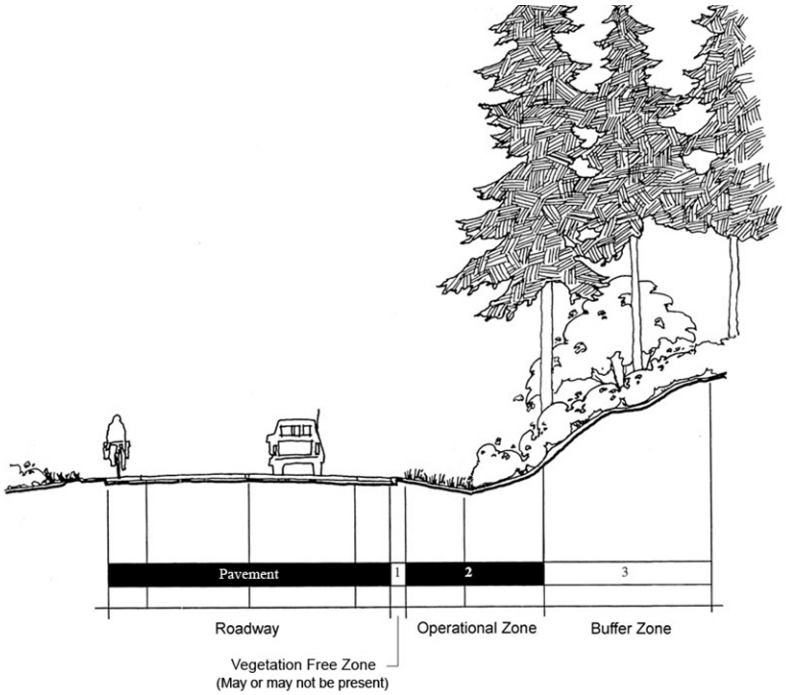
Roadside Maintenance Activities
All roadside maintenance activities are to be planned and conducted in a way that discourages or eliminates unwanted vegetation and promotes desirable vegetation. This is the basic premise of Integrated Vegetation Management. In every case it is essential that the results of maintenance activities are evaluated and adjusted as necessary to maximize efficiency and effectiveness. However, in some cases maintenance activities are conducted routinely on an annual basis, such as maintenance of Zone 1 and routine mowing where required.

> **Routine Maintenance Activities** – When vegetation maintenance activities are required to keep the area of roadside being treated in an annually controlled condition, activities are considered routine. This is more critical for areas of vegetated roadside near the travel lanes, edge of pavement, and around guardrails. This plan provides prescriptions and gives locations for routine maintenance activities including maintenance of Zone 1 and annual mowing.

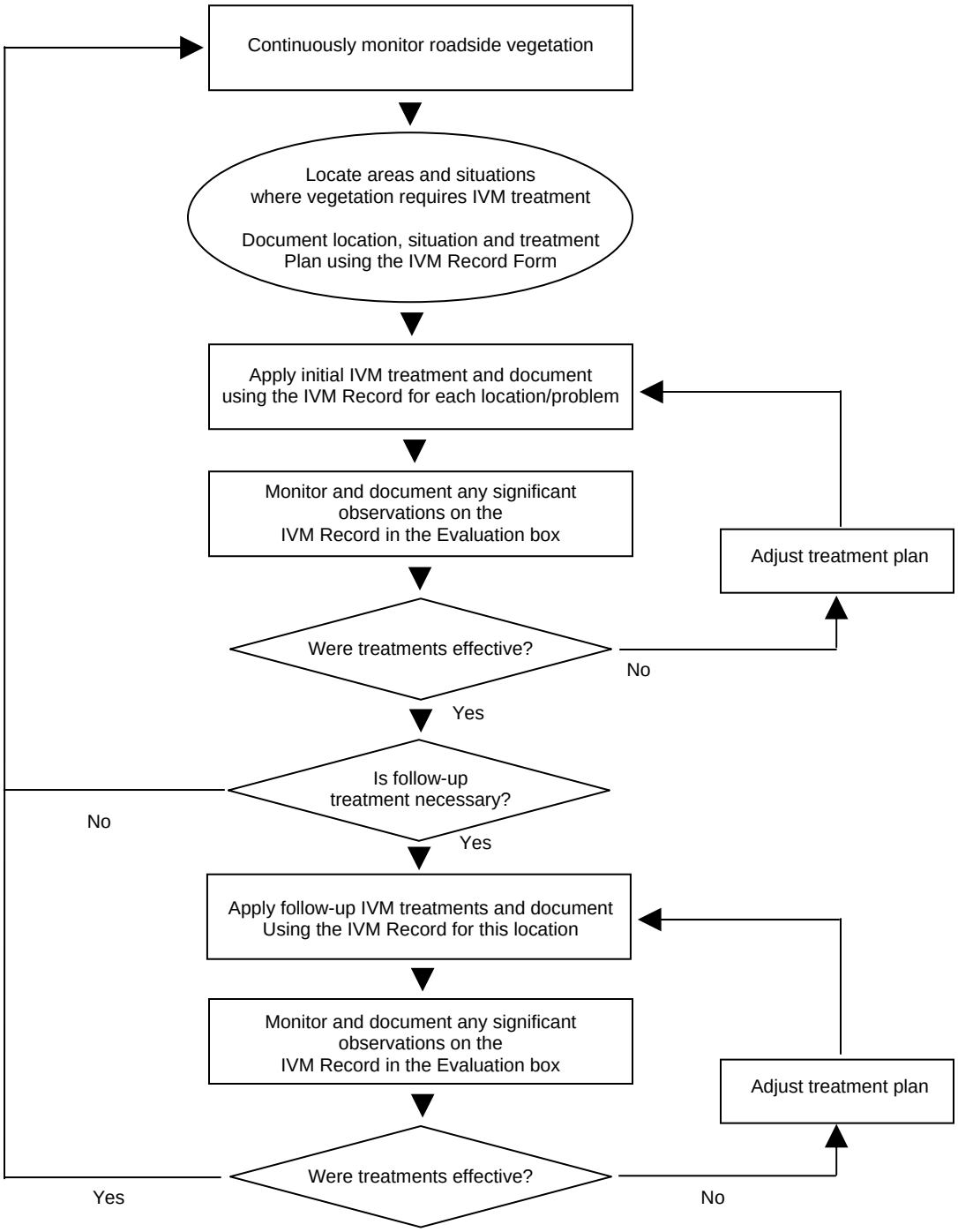
Integrated Vegetation Management Activities – Although all activities are to be planned and conducted in accordance with the principles of IVM, many vegetation maintenance activities are intended to target a specific type or types of unwanted plants. By carefully planning and precise execution of these target specific activities it is possible over time to establish desirable vegetation, which will prevent the re-infestation of unwanted plants and reduce the need for maintenance over time. The process for determining and carrying out IVM actions is illustrated in **Figure 3** on the following page. This plan document provides information, locations, and gives prescriptions for selective control of weeds and other unwanted vegetation and for the promotion and establishment of desirable vegetation. Further information and guidance on the application of IVM is available in the document Integrated Vegetation Management for Roadsides (WSDOT, July 1997) www.wsdot.wa.gov/maintenance/pdf/IVM.pdf

Special Maintenance Areas – In some locations there are unique situations that require special consideration in determining appropriate vegetation maintenance actions. Examples of these are: environmentally sensitive areas, areas with special neighbor concerns, areas where a higher level of maintenance is expected such as gateway interchanges or formally landscaped areas, or along highways that cross tribal or federal lands. This plan provides information and guidance on the locations and unique requirements or restrictions on maintenance activities in all of these situations throughout the area.

Herbicide Use – WSDOT has conducted independent research on herbicide risk from toxicity and environmental fate, based specifically on agency application methods and use rates. Findings from this research have been used to establish an approved palette of herbicides and application limits for state highways. A complete summary of herbicides approved for use on WSDOT rights of way is included in **Appendix B**.



Typical Roadside Vegetation Management Zones
Figure 2



The IVM Decision-Making Process
Figure 3

Area IVM Goals

The purpose of this section is to identify the highest priority work activities for roadside vegetation management in Southwest Region, Area 3 in relation to Maintenance Accountability Process (MAP) activity groups and specified service level targets. In addition to the mowing and Zone 1 maintenance activities routinely accomplished on an annual basis in the area, these goals are intended to serve as a work plan for crews. Priorities are listed by specific activities and locations in relation to the three major MAP groups for roadside vegetation maintenance performance: Control of Vegetative Obstructions, Noxious Weed Control, and Nuisance Weed Control. This section of the plan is intended to supplement the information in the following section, ***Southwest Region, Area 3 – Roadside Vegetation Management Plan*** which details the guidelines and methods for accomplishing the work of roadside vegetation management.

Control of Vegetative Obstructions

Since the work of this group of maintenance activities relates to the safety and operation of the highway, these items are considered first priority in terms of the overall roadside maintenance priority. The primary activities for control of obstructions are annual mowing and trimming along the edges of all highway pavements, and applying herbicides to control vegetation around guardrail and maintain vegetation-free strips as designated in Appendix C. Beyond this, activities and locations of greatest need include:

- *List any areas needing attention for sight distance or encroaching tree and brush.*

Noxious Weed Control

Noxious weeds are those species legally designated by state and county regulations for required control by all property owners. Because laws provide for fines and/or control work and billing of property owners by county administration, work under this group is considered second priority after critical safety related locations have been addressed. The majority of noxious weed control activities are conducted by crews patrolling the roadsides and treating visible weeds as they emerge each year, or in response to County weed board notices. In addition to this work, actions and locations designated as focus areas for eradication over the next several years due to reoccurring infestations include:

- Eradicate knotweed from the right of way throughout the area including sites on SR105, US101 SR4 and SR401.
- Eradicate gorse from right of way on SR103 near Oysterville.

Nuisance Vegetation Control

Nuisance vegetation control includes control/management of weed species that are recommended but not mandated, by state and county law. It also includes work such as mowing of grass and weeds in areas where a more neatly maintained appearance is desired such as in gateway interchanges or highways in urbanized areas. Because nuisance vegetation control is lower priority after safety related and legally mandated activities, the location and work actions listed below may be postponed depending on availability of resources.

- *Scotch broom control anywhere? Probably not a whole lot of this work in your area…*

1. ROUTINE MAINTENANCE ACTIVITIES

Roadside maintenance activities are considered routine when regular periodic treatment is required to keep vegetative growth from interfering with highway operational and maintenance objectives. Typical routine maintenance activities are maintenance of Zone 1 and certain types of mowing and trimming.

1.1. Routine Shoulder Maintenance (Zone 1)

WSDOT is currently re-evaluating its policy for maintenance of Zone 1. Past policy and practice will be refined over the coming years in response to findings from study of long-term benefit/cost resulting from alternative treatments. For the 2009 growing season, vegetation at the edge of pavement will be managed as follows on roadsides in this maintenance area:

1.1.1. Guidelines

- Zone 1 is maintained with the annual application of herbicides only under guardrail installations and along sections along the bay or the river, where large rip rap has been installed directly adjacent to the edge of pavement to armor against wave erosion.
- Where maintained, Zone 1 is 3' band width or less.

1.1.2 Methods

- Herbicide being applied to Zone 1 will consist of a non-selective, post emergent product (glyphosate) and a soil residual pre-emergent product (mixture of sulfometuron-methyl and chlorsulfuron).
- Zone 1 treatments will typically be applied in May, depending on the annual pattern of rainfall and plant growth.
- Pavement edge zones will be treated with selective broadleaf herbicides, as necessary in July and August to control pavement damaging weeds such as horsetail and prolific infestations of noxious and/or nuisance weeds in former Zone 1 areas.
- Pavement edges will be monitored for surface drainage problems resulting from sod build-up and will be graded in select locations as necessary to allow for hydraulic flow of storm water off the roadway surface.
- See **Appendix A, Routine Maintenance Prescriptions, Zone 1 Maintenance**
- Monitoring sites have been set up to evaluate an alternative method in managing zone 1 where guardrail is present. See **Appendix C** for locations of "Under-Whacker."

1.1.3 Locations

- Areas for Zone 1 maintenance and areas set aside for evaluation of alternative practices are shown in **Appendix C, Zone 1 Map**

1.2. Routine Mowing/Trimming (Zone 2)

1.2.1. Guidelines

- All shoulder sections throughout the area without guardrail will be routinely mowed as necessary to preserve sight distance, visibility of highway delineators, and to prevent vegetation encroachment onto paved shoulders.

- Mowing cycles typically repeat twice per year with one pass adjacent to the edge of pavement. If a ditch line is present, the mowing pass will only extend to the bottom of the ditch.
- Intersections, curves and driveway approaches may be mowed earlier and more often if necessary to maintain traffic sight distance. Some of these locations may also be mowed wider than one pass if necessary to maintain adequate sight distance.
- Trimming of encroaching brush with side-arm mowers will also be done routinely, but only where and when necessary to preserve sight distance and to keep guardrail and signs exposed. Care will be taken when trimming with side arm mowers to avoid leaving shattered branch ends or bare disturbed soils.

1.2.2. Methods

- Depending and weather pattern and corresponding vegetation growth, the first mowing cycle will typically start in late April or the first of May, beginning with low-lying and wet areas near the coast.
- Again, depending on weather and plant growth, the second mowing cycle typically takes place beginning in Mid June and extends through July.
- See **Appendix A, Routine Maintenance Prescriptions, Zone 2 Maintenance**

1.3. Hazard Tree Removal

1.3.1. Guidelines

- Hazard tree removal is considered a routine maintenance activity because maintenance is constantly on the look out for any trees that pose an imminent threat to the highway or traffic, and whenever hazard trees are identified they are routinely removed as soon as possible.
- Hazard trees may be dead, leaning, or structurally unsound. Best horticultural judgment will be used in evaluating trees that appear diseased or structurally unsound or are believed to pose a long-term threat to determine the best course of action.
- Another consideration in removal of trees is the contribution to shading in areas prone to frost and ice formation on the highway surface. When such areas are identified, the surrounding canopy may be thinned through selective removal of large trees on the right of way.

1.3.2. Methods

- Hazard trees are removed in such a manner to minimize damage and impact to the highway structure and other healthy trees and under-story vegetation.

2. INTEGRATED VEGETATION MANAGEMENT ACTIVITIES

For all vegetation management needs not addressed through routine maintenance as described above, activities are planned and carried out using the principles of Integrated Vegetation Management (IVM) and the decision making process diagrammed on Page 5 in **Figure 3**. IVM is a coordinated decision making process that uses the most appropriate vegetation management methods and strategy, along with a monitoring and evaluation system, to achieve long term roadside maintenance goals and objectives in an environmentally and economically sound manner. The goal in utilizing the IVM approach is the effective control of unwanted vegetation and the establishment of stable, low maintenance native or naturalized plant communities on the roadside that are compatible with:

- Highway maintenance and safety objectives.
- Preservation of environmental quality.
- Weed control requirements.
- The concern's of WSDOT's customers and neighbors.

Long term, the use of the IVM approach can reduce the frequency and cost of maintenance, as well as minimizing the need to use herbicides.

2.1. Integrated Vegetation Management Planning and Tracking Database

2.1.1. Guidelines

- An Integrated Vegetation Management Records database is available for use. This database is accessed through the same WSDOT network application as the Pesticide Application Records database.
- Any activities focused on treatment of a specific location and species infestation, or focused on treatment of any types of unwanted vegetation throughout the area will be documented with an initial IVM record outlining the long-term treatment plan. These same records will be updated over time whenever planned treatments are carried out, or when observations are made as to the success or failure of past treatments.
- Treatment records may be printed out and inserted into **Appendix F**.

2.2. Noxious Weed Control

2.2.1. Guidelines

- Noxious weed control is a high priority for WSDOT because of state law requiring control of designated species. Transportation rights of way are high priority locations for control of noxious weed species within the state because they cross and link so many adjacent properties and land uses.
- Whenever possible designated noxious weed species and infestations locations will be documented and treated following plans as defined by IVM record forms in the database.
- Washington State Law classifies noxious weeds in three classes: A, B, and C. All Class A species are required control wherever they occur statewide. The law allows for individual county weed boards to designate individual Class B and C weeds for control within the counties depending on how widespread and potentially harmful they are at the local level.

- For the purposes of this plan, noxious weeds are defined as species listed as Class A and within any Classes B or C designated or prioritized for control within the counties.
- For SW Region, Area 3 the following weeds designated for control are known to exist on state highway rights of way in Pacific and Wahkiakum Counties. The two short sections of highway in the area that extend into Lewis and Cowlitz Counties will be considered to have the same list.

Class A
Class A noxious weeds are non-native species with a limited distribution in the state. No Class A weeds are known to exist on WSDOT rights of way in this area.

Class B
Class B weeds are more widespread than Class A, with control mandated by law only if infestations are generally limited and the species are designated within the individual counties by the County Noxious Weed Control Boards. For SW Region, Area 3 the same weed list applies to all counties and consists of the following designated species which are known to exist on WSDOT right of way in this area:

Common Name/Botanical Name
Gorse/Ulex europaeus
Knotweed sp./Polygonum sp.
Ragwort tansy/Senecio jacobaea

Other designated Class B species are known to occur occasionally on the highway rights of way, or are present in ongoing infestations adjacent to the right of way. Area maintenance personnel will work with the county weed boards to continually monitor the roadside for new infestations and whenever possible, remove any designated species before they go to seed.

Class C
Class C noxious weeds are widely established throughout Washington or may impact the agricultural industry. All Class C noxious weeds on state right of way in Pacific and Wahkiakum Counties in SW Region, Area 3 are managed as nuisance weeds and described in **Section 2.3**.

2.2.2. Methods

- Because noxious weed species are often difficult to control, herbicides treatments are often the primary, initial means of control. Timing of applications is critical to maximize the effectiveness of herbicide treatments.
- If infestations are limited to a few plants, hand pulling is also effective when the entire root system is also removed. Maintenance employees are encouraged to be aware of and look for new noxious weed occurrences, and to stop and pull these plants whenever possible.
- In conjunction with weed control treatments, a variety of other measures may be taken to promote natural vegetative competition through seeding, planting, and soil enhancement. The IVM Record and database are essential to the execution and success of these control measures.

- For recommended treatments specific to noxious weed species, see **Appendix A, IVM Prescriptions, Noxious Weed Control**

2.2.3. Locations

- **Appendix D, Noxious Weed Location Map** shows locations where reoccurring infestations of knotweed and gorse are known to exist in SW Region, Area 3. Tansy ragwort occurs sporadically throughout the area and will be controlled each year prior to seed production.

2.3. Nuisance Weed Control

2.3.1. Guidelines

- For the purposes of this plan, nuisance weed species are defined as species listed as Class B and C weeds on the state noxious weed lists, but not required for control within individual counties.
- Nuisance weed control, while not required by state law, provides many positive benefits to the overall condition of the roadside, enhances ecological function by maintaining and enhancing native plant communities, reduces the potential for continuing spread of weed infestations, and enhances visual quality.
- Nuisance weed species will be controlled when time and budget allows.
- Priority will be given to locations with the highest chance for success including relatively new infestations and where there is potential for infestations to spread to un-infested areas of the right of way or to un-infested neighboring properties.
- Species designated as nuisance weeds in SW Region, Area 3 that are known to exist on the highway right of way include:

Common Name/Botanical Name
Bull thistle/Cirsium vulgare
Canada thistle/Cirsium arvense
Common Mullein/Verbascum thapsus
Common tansy/Tanacetum vulgare
Himalayan blackberry/Rubus discolor
Poison hemlock/Conium maculatum
Scotch broom/Cytisus scoparius
St. Johnswort/Hypericum perforatum
Wild chervil/Anthriscus sylvestris

2.3.2. Methods

- Control measures for nuisance weed are dependent on the type of plant.
- Woody species such as Scotch broom and Himalayan blackberry are most effectively treated with a combination of cutting, herbicide treatments and encouragement of native vegetation.
- Perennial species such as Canada thistle are most effective controlled by succeeding years of properly timed herbicide applications.
- Annual or biennial species such as bull thistle and common tansy may also be effectively controlled with herbicide applications when plants are in the rosette stage in spring, or by hand pulling prior to seed set.

- See **Appendix A, IVM Prescriptions, Nuisance Weed Control**.

2.3.3. Locations

- Reoccurring nuisance weed infestations occur in SW Region, Area 3 have not been mapped. Any locations targeted for nuisance weed control will be documented with an IVM Treatment Record.

2.4. Tree and Brush Control

2.4.1. Guidelines

- Trees and brush are controlled for safety reasons including preservation of sight distance at curves and intersections, and for visibility of signs, and preventing trees with large trunk diameter from growing too close to traffic lanes.
- Native large shrub and small tree species should be allowed to grow and mature in Zone 2 and selectively trimmed if they begin to encroach on site distance or other traffic operational requirements.
- Large coniferous or hardwood deciduous tree species such as Douglas fir, bigleaf maple, alder, or cottonwood left to grow in Zone 2 and in some cases parts of Zone 3, can reach substantial size over a relatively short period of time and should be removed when young.
- Any tree with a trunk diameter of 4" or greater is considered a hazard for errant vehicles in Zone 2 and should be removed. This zone is also referred to as the Design Clear Zone and is typically maintained to a width of 30' from the traffic lane edge. Actual minimum widths are determined by roadway alignment, traffic speed and volume, and cross-section of the roadside, as specified in the WSDOT Design Manual, Chapter 700.04. *www.wsdot.wa.gov/fasc/EngineeringPublications/Manuals/DesignManual.pdf*

2.4.2. Methods

- Removal of undesirable tree and brush species, or encroaching tree branches is typically accomplished by hand cutting, hand pulling, properly timed selective mowing or trimming, properly timed herbicide applications, or combinations thereof.
- Timing of activities has a significant effect on how the vegetation grows back. Herbicide applications made by hand, directly to the cut surfaces of unwanted plants may be used to reduce or eliminate grow back.
- Care will be taken to make control operations look as natural as possible. Operations will be planned and executed to avoid leaving bare disturbed soil, shattered branch ends, and/or widespread brown/dead vegetation from herbicide treatments.
- Chemical control methods will not be used on conifers greater than 2 feet in height and/or large dense patches of young trees, to avoid negative visual impacts from "brown-out".
- Chemical control methods will not be used on deciduous plants until after the first of September, except for stump treatments in conjunction with mechanical cutting to eliminate grow-back.
- In some cases when tree and brush species are cut by hand, the debris can be fed through a chipper and placed back on the roadside in the form of mulch for soil enhancement and weed prevention.

- In some locations it is most effective to mow back the majority of the existing vegetation and then selectively treat undesirable re-growth with herbicides in succeeding years, allowing desirable vegetation to grow up and form a competitive cover.
- When possible, safe and practical, seedling of desirable trees may be dug or pulled by hand and transplanted to areas where there growth will be beneficial and appropriate. Agreements may be signed to allow private citizens to collect seedlings for use as transplants.
- See **Appendix A, IVM Prescriptions, Tree and Brush Control**.

3. SPECIAL MAINTENANCE AREAS

Special Maintenance Areas are any locations with unique maintenance requirements or special considerations for roadside management. These areas may include interchanges, community entrances or enhancement areas, areas maintained by cities, bicycle paths, storm water retention ponds, state park land, wellheads, environmentally sensitive areas, school zones and roadsides adjacent to individual properties with current or annual no-spray agreements.

3.1. City Maintenance Areas

3.1.1. Guidelines

- In most cases where non-limited access highways exist within city limits, the roadside (all area outside the highway pavement and drainage systems) are maintained by the local city government.

3.1.2. Locations

- Areas where roadsides are maintained by cities are listed by route and begin and end milepost in **Appendix E**.

3.2. Herbicide Sensitive Areas

3.2.1. Guidelines

- In some situations herbicide use is limited or restricted because of legal requirements, neighbor concerns, or WSDOT imposed environmental safety precautions.
- In these locations, vegetation must be managed without the use of herbicides, with only a limited palette of herbicide types, or with special approval from the land owner.

3.2.2. Locations

- The only herbicide sensitive area in SW Region, Area 3 is where SR105 crosses Showalter Tribal lands, mileposts listed in **Appendix E**.

3.3. Adopt-a-Highway and Neighbor Maintained Agreements

3.3.1. Guidelines

- In some locations WSDOT has signed agreements with private citizens or neighboring businesses for maintenance of roadside vegetation.

3.3.2. Locations

- There is currently only one neighbor maintained agreement in SW Region, Area 3 on SR4 as listed in **Appendix E**, along with notes describing arrangements for this location.
- Negotiations are ongoing for a site at the entrance to the town of Seaview, but currently no agreement is in place.

3.4. Wetland Mitigation Sites

3.4.1. Guidelines

- Wetland mitigation sites are carefully monitored through WSDOT's Environmental Services Office for up to 10 years following their creation to ensure compliance with environmental regulation.
- In most cases vegetation in these sites is planted and established through the construction and long-term monitoring process so that once they are turned over to maintenance, actions are not required unless noxious weeds or hazardous trees become an issue.
- In cases where mitigation sites have fulfilled their original permit requirements and have been turned back to maintenance, sites should be inspected on an annual basis to determine if any repairs or weed control is necessary.

3.4.2. Locations

- All wetland mitigation sites within SW Region, Area 3 are listed by the nearest route and milepost in **Appendix E**, along with scheduled timing for turnover to maintenance.

3.5. IVM Treatment Sites

3.5.1. Guidelines

- As discussed in **Section 2.1**, selected sites are designated for planning, carrying out and monitoring multi-year IVM treatments for control of weeds or other unwanted vegetation.
- IVM treatment sites are documented with an initial record in the IVM Treatment Database, to identify the problem to be addressed, location(s), management goals, and integrated treatment plan.
- Records are updated each time a treatment is made, results observed, or when the treatment plan is modified based on observations.

3.5.2. Locations

- All designated IVM treatment sites within SW Region, Area 3 are listed by the route and milepost in **Appendix E**. This list is updated annually as new sites may be added and successfully treated sites removed.

Zone 1 Maintenance - Bareground Treatment

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Gravel shoulder	Gravel shoulder	Gravel shoulder	Gravel shoulder
MANAGEMENT GOALS:	Vegetation free	Vegetation free	Vegetation free	Vegetation free
METHOD:	Annual herbicide application	Annual herbicide application	Annual herbicide application	Annual herbicide application
EQUIPMENT:	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles
MATERIALS:	Payload 8 oz./acre + Oust 3 oz./acre	Milestone VM 7 oz./acre + Round Up Pro 64 oz./acre	Round Up Pro 64-128 oz./acre	Landmark 4.5-7 oz./acre + Razor Pro 64 oz./acre
TIMING:	Early Spring or Fall	Early Spring	Early to mid June	Early Spring
IVM FOLLOW-UP:	Evaluate control	Evaluate control	Evaluate control	Evaluate control
REMARKS:	Typically applied in a 2 to 3 ft. band.			

Zone 1 Maintenance - Bareground Treatment

	OPTION 5			
TREATMENT TYPE:	Around senstive locations			
MANAGEMENT GOALS:	Vegetation free			
METHOD:	Annual herbicide application			
EQUIPMENT:	Spray truck w/ banned width nozzles			
MATERIALS:	Aquanet at 64 oz./acre + LI700 at 32 to 64 oz./100 gal.			
TIMING:	Early Spring or Fall			
IVM FOLLOW-UP:	Evaluate control			
REMARKS:	Typically applied in a 2 to 3 ft. band.			

Zone 2 Maintenance - Tree and Brush

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Confir control	Deciduous tree and brush	Deciduous tree and brush	Deciduous tree and brush
MANAGEMENT GOALS:	Control vegetation obstruction	Control vegetation obstruction	Control vegetation obstruction	Control vegetation obstruction
METHOD:	Herbicide treatment	Herbicide treatment	Herbicide treatment	Stump Treatment
EQUIPMENT:	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Spray truck w/ banned width nozzles	Dobber or Spray bottle
MATERIALS:	Garlon 3A 128 oz. and Escort 1 oz.	Milestone VM 5-7 oz. plus Garlon 3A 64 oz.	Krenite S	Garlon 3A 50/50 with water or forestry oil. Garlon 4 50/50 with water or forestry oil.
TIMING:	Late summer, early fall	Late summer, early fall	Late summer before leaf turn	Anytime
IVM FOLLOW-UP:	Evaluate control	Evaluate control	Evaluate control	Evaluate control
REMARKS:	Avoid brown out by spraying late in the season and spray only to appropriate height.			

Noxious Weed Contro - Gorse

	OPTION 1	OPTION 2	OPTION 3	
TREATMENT TYPE:	Chemical application	Chemical application	Chemical application	
ACTION THRESHOLD:	As soon as plant appears	As soon as plant appears	As soon as plant appears	
MANAGEMENT GOALS:	Eradication and control of listed noxious weeds.	Eradication and control of listed noxious weeds.	Eradication and control of listed noxious weeds.	
METHOD:	Spot treatment w/ herbicide.	Spot treatment w/ herbicide.	Spot treatment w/ herbicide.	
EQUIPMENT:	Tank sprayer where possible, backpack spray where necessary.	Tank sprayer where possible, backpack spray where necessary.	Tank sprayer where possible, backpack spray where necessary.	
MATERIALS:	1/2 to 1 oz. Escort XP with Phase	1 to 8 quartz Garlon 4 per acre	Razor Pro 2 to10 quartz per acre	
TIMING:	Spray by June	While actively growing	While actively growing	
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertilize to reduce weeds competition.	Reapply as necessary	Reapply as necessary	
REMARKS:	Be observant of temperature when apply Garlon 4			

Noxious Weed Control - Knotweed sp.

	OPTION 1	OPTION 2		
TREATMENT TYPE:	Chemical application	Stem injection		
ACTION THRESHOLD:	Whever present (dependent on available resources)	Smaller infestations and or near water		
MANAGEMENT GOALS:	Eradication and control only if your county requires.	Eradication and control only if your county requires.		
METHOD:	Spot treatment w/ heribicde	Stem injection w/ herbicide		
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Injection equipment		
MATERIALS:	Habitat/MSO 0.5-1 lbs. per acre	Concentrated Roundup at 2%		
TIMING:	Early to late bloom between July and August	Once seasonal growth has occurred		
IVM FOLLOW-UP:	Reapply if necessary following year. Restore site w/ native vegetation.	Re-treat green stems as necessary. Restore site w/ native vegetation		
REMARKS:				

Noxious Weed Control - Tansy Ragwort

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Chemical application	Chemical application	Manual	Bio-Control
ACTION THRESHOLD:	As soon as plants appear.	As soon as plants appear.	As soon as plants appear.	
MANAGEMENT GOALS:	Eradication and control if required by county.	Eradication and control if required by county.	Eradication and control if required by county.	Eradication and control if required by county.
METHOD:	Spot treatment w/herbicide	Spot treatment w/herbicide	Hand removal. May include cut stem.	
EQUIPMENT:	Tank spayer where possible, backpack spayer where necessary.	Tank spayer where possible, backpack spayer where necessary.		
MATERIALS:	Escort 1/2 to 1 oz./acre	Milestone VM 5 to 7 oz./acre	None required. Round -up in spray bottle for cut stem.	Flea beetle/Cinebar Moth
TIMING:	Spray by May	Spray by June	Pull by June	
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertlize to reduce weed competition.	Reapply as necessary. Seed and fertlize to reduce weed competition.	Repeat as necessary. Seed and fertlize to reduce weed competition.	
REMARKS:				

Nuisance Weed Control - Bull Thistle

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Chemical application	Chemical application	Chemical application	Bio-Control
ACTION THRESHOLD:	Wherever present	Wherever present	Wherever present	
MANAGEMENT GOALS:	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.
METHOD:	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	Bio-Control
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	
MATERIALS:	Transline at 2/3 - 1 1/3 pint/acre	Milestone VM 3 to 5 oz. per acre	Telar XP 1-3 oz./acre	Urophora Stylata
TIMING:	Apply from rosette to bud stage to actively growing thistle	Apply to young actively growing weeds.	Apply to young actively growing weeds.	Early growing stage
IVM FOLLOW-UP:	Repeat annually as necessary	Repeat annually as necessary	Repeat annually as necessary	Reapply as necessary
REMARKS:				

Nuisance Weed Control - Canada Thistle

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Chemical application	Chemical application	Chemical application	Bio-Control
ACTION THRESHOLD:	Wherever present	Wherever present	Wherever present	Wherever present
MANAGEMENT GOALS:	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.	Eradication and control of selected nuisance weeds and brush.
METHOD:	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	Foliar treatment w/ herbicide	
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	
MATERIALS:	Transline at 2/3 - 1 1/3 pint/acre	Milestone VM 5-7 oz./acre	Telar XP 1-3 oz./acre	Rhinocyllus Conicus
TIMING:	Apply from rosette to bud stage to actively growing thistle	Pre bud stage	Apply to the bud at bloom stage	Early growing season
IVM FOLLOW-UP:	Repeat annually as necessary	Apply before first frost	Apply before first frost	Redeploy as needed
REMARKS:	For most effective control, apply as a broadcast treatment to the entire infested area.			

Nuisance Weed Control - Common Mullein

	OPTION 1			
TREATMENT TYPE:	Chemical application			
ACTION THRESHOLD:	Whe resources are available.			
MANAGEMENT GOALS:	Minimize population and prevent further spread of nuisance weeds.			
METHOD:	Foliar treatment, mechanical			
EQUIPMENT:	Truck mounted sprayer where possible, backpack spayer where necessary, mower.			
MATERIALS:	7oz./acre Milestone VM			
TIMING:	Spring			
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertlize or plant to restore native plant community.			
REMARKS:				

Nuisance Weed Control - Common Tansy

	OPTION 1	OPTION 2	OPTION 3	
TREATMENT TYPE:	Whever present	Whever present	Whever present	
ACTION THRESHOLD:	Whever present	Whever present	Whever present	
MANAGEMENT GOALS:	Eradication	Eradiction	Eradiction	
METHOD:	Foliar treatment. Cut stem treatment.	Foliar treatment	Foliar treatment	
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	Truck mounted sprayer where possible, backpack sprayer where necessary.	
MATERIALS:	Telar 1 to 3 oz./acre	Escort 1 to 2 oz./acre	Milestone VM 3 to 5 oz./acre	
TIMING:	Anytime	Apply to actively growing vegetation in the Spring	Apply to actively growing vegetation in the Spring	
IVM FOLLOW-UP:	Re-cut/treat as necessary.	Retreat as necessary	Retreat as necessary	
REMARKS:				

Nuisance Weed Control - Himalayan Blackberry

	OPTION 1	OPTION 2		
TREATMENT TYPE:	Chemical application	Mechanical application		
ACTION THRESHOLD:	Whever present (dependant on resources)	When resources are available.		
MANAGEMENT GOALS:	Control and eradicate if county requires.	Minimize populations and prevent further spead of weed.		
METHOD:	Foliar treatment w/ herbicide	Mechanical control with follow-up cut stump treatment.		
EQUIPMENT:	Truck mounted sprayer where possible, backpack spayer where necessary.	Mower or hand labor, backpack spayer or spray bottle where necessary.		
MATERIALS:	Krenite 1.5-6 gallons/acre	Crossbow 1.25-1.5 gallons/acre		
TIMING:	In the Fall, after berries drop.	After mowing, in the fall.		
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertilize or plant to restore native plant community	Re-cut/treat as necessary. Seed and fertilize or plant to restore native plant community.		
REMARKS:				

Nuisance Weed Control - Poison Hemlock

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Chemical application	Hand removal	Chemical application	Chemical application
ACTION THRESHOLD:	When plants appear	When plants appear	When plants appear	When plants appear
MANAGEMENT GOALS:	Eradication and control of listed noxious weeds.	Eradication and control of listed noxious weeds.	Eradication and control of listed noxious weeds.	Eradication and control of listed noxious weeds.
METHOD:	Spot treatment w/ herbicide	Hand removal. Remove plant from site	Spot treatment w/ herbicide	Spot treatment w/ herbicide
EQUIPMENT:	Backpack sprayer, pickup etc.	Labor, transporation	Backpack sprayer, pickup etc.	Backpack sprayer, pickup etc.
MATERIALS:	Telar 1 to 3 oz.	None required	Excort 1 to 2 oz./Phase	1 -2 percent per acre Glyphosate
TIMING:	Spray by April	Pull by Arpil	Apply to actively growing plan	Treat at bud to full bloom stage of growth
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertilize to reduce weed competition.	Repeat as necessary. Seed and fertlize to reduce weed competition.	Repply as necessary	Reapply as necessary
REMARKS:	Use a nonionic surfactant or silicone surfactant			

Nuisance Weed Control - Scotch broom

	OPTION 1	OPTION 2	OPTION 3	OPTION 4
TREATMENT TYPE:	Chemical application	Manual application	Mechanical application	Bio-Control
ACTION THRESHOLD:	Whever new infestations occur (dependant on available resources)	Wherever present (dependant on available resources)	When resources are available.	When ever present
MANAGEMENT GOALS:	Minimize populations and prevent further spread of weed.	Minimize populations and prevent further spread of weeds.	Minimize populations and prevent further spread of nuisance weeds.	Minimize spread
METHOD:	Foliar treatment w/herbicide.	Hand pull	Mechanical control with follow-up cut stump treatment.	Bio-Control
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary.	Weed wrench option, brown brush monitor	Mower, backpack sprayer where necessary.	Truck
MATERIALS:	Garlon 3A at 2 quartz with Escort 2 oz. with Phase per acre	Garlon 4 mix 2 to 1 with crop oil	Garlon 3A at 1 to 1 with water or surfactant	Exapionfuscirostre
TIMING:	Apply during actively growing season	Anytime	After mowing	release when actively growing.
IVM FOLLOW-UP:	Reapply as necessary. Seed and fertilize or plant to restore native plant community.	Reapply as necessary. Seed and fertilize or plant to restore native plant community.	Re-cut/treat as necessary. Seed and fertilize or plant to restore native plant community.	Evaluate, redeploy if necessary
REMARKS:				

Nuisance Weed Control - St. Johnswort

	OPTION 1	OPTION 2	OPTION 3	
TREATMENT TYPE:	Chemical application	Chemical application		
ACTION THRESHOLD:	When resources are available.	When resources are available.		
MANAGEMENT GOALS:	Minimize populations and prevent further spread of nuisance weeds.	Minimize populations and prevent further spread of nuisance weeds.		
METHOD:	Foliar treatment, mechanical.	Foliar treatment, mechanical.		
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer where necessary, mower.	Truck mounted sprayer where possible, backpack sprayer where necessary, mower.		
MATERIALS:	Milestone VM 5 to 7 oz./acres	1-2 oz./acre Escort plus Phase		
TIMING:	Apply after weeds emerge	Apply after weeds emerge		
IVM FOLLOW-UP:	Reapply as necessary	Reapply as necessary		
REMARKS:	Repeat application as needed			

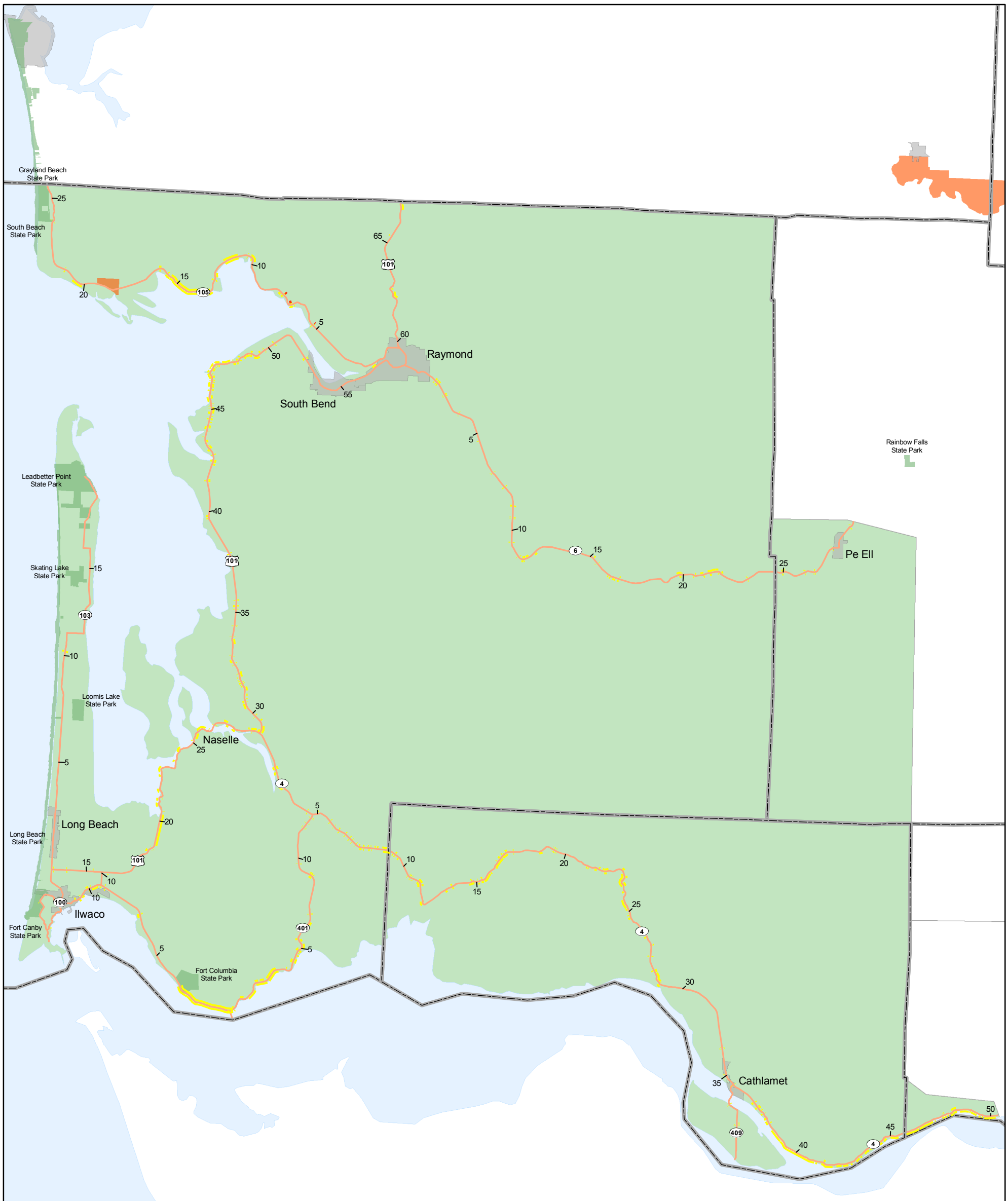
Nuisance Weed Control - Wild Chervil

	OPTION 1	OPTION 2		
TREATMENT TYPE:	Chemical application	Chemical application		
ACTION THRESHOLD:	As soon as plants appear.	As soon as plants appear.		
MANAGEMENT GOALS:	Eradication and control of noxious weeds.	Eradication and control of noxious weeds.		
METHOD:	Spot treatment w/ herbicide.	Spot treatment w/ herbicide.		
EQUIPMENT:	Truck mounted sprayer where possible, backpack sprayer	Truck mounted sprayer where possible, backpack sprayer		
MATERIALS:	2 oz./acre Escort and 7oz./acre Milestone VM	1-3 oz./acre Telar DF		
TIMING:	Prebloom April/May	Apply early post emergence to actively growing plants		
IVM FOLLOW-UP:	Repeat as necessary. Seed and fertlize to reduce weed competition.	Repeat as necessary		
REMARKS:	Reportedly, it tolerates 24-D			

Herbicides Approved for Use on WSDOT Rights of Way

When making herbicide applications:
1. Always read and follow product labels
2. Always use personal protective equipment when mixing, loading, and applying

Chemical Name	***Product Name(s)***	***Where Used***	***How/Why Used***	***Notes/Recommendations***	***Restrictions***	***Cautions***
2,4-D	Weedar 64 Amine 4 Veteran 720 Curtail WeedDestroy Platoon Crossbow Escalade Weedmaster Solution Savage Weedone LV4	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Ester and acid formulations of 2,4-D may provide a good alternative to amine formulations. A number of the 2,4-D products come premixed with other herbicides.	Amine formulations of 2,4-D are restricted for use within 60' of all water	Amine formulations cause irreversible eye damage and are highly toxic to rainbow trout. All 2,4-D products pose risks when applied near grapes and other sensitive crops.
Bromacil	Krovar 1 DF Hyvar	Zone 1	Nonselective pre-emergent grass and weed control	Krovar and Hyvar are premixed with diuron	Westside - Restricted for use Eastside - Krovar restricted for use within 60' of all water	Bromacil is potentially mobile in soil, use caution if rain is possible.
Bromoxynil	Buctril 2EC BroClean Brox 2E	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Effective broadleaf weed control without grass seed suppression	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly toxic to fresh water fish
Chlorsulfuron	Telar XP Landmark XP	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Product highly effective on Canadian thistle and horsetail. Landmark is premixed with Oust.	None	None
Clopyralid	Transline Curtail Pathfinder	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Curtail is premixed with 2,4-D, Pathfinder is premixed with triclopyr	Curtail and Pathfinder are restricted for use within 60' of all water because of mixture with other restricted herbicides.	Curtail contains 2,4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout
Dicamba	Vanquish Veteran 720	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Vanquish is the dicamba formulation without 2,4-D	Veteran 720 is restricted for use within 60' of all water because of 2,4-D amine content	Veteran 720 contains 2-4-D amine which causes irreversible eye damage and is highly toxic to rainbow trout
Dichlobenil	Norosac 4G Casoron	Ornamental planting beds	Pre-emergent weed control in ground cover beds. Post emergent control of grasses.	Highly effective for pre-emergent control of unwanted weeds in ornamentals	Restricted for use within 60' of all water	Dichlobenil is highly toxic to aquatic insects
Diflufenzopyr	Overdrive	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	None	None	None
Diuron	Karmex Diuron 4 L Diuron 80 DF	Zone 1	Nonselective pre-emergent grass and weed control	Cost effective weed control for Zone 1 in Eastern Washington	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly toxic to fish.
Flumioxazin	Payload	Zone 1	Nonselective pre-emergent grass and weed control	Second year of use in zone 1, still evaluating	Restricted for use within 60' of all salt water	Highly toxic to estuarine invertebrates
Fluroxypyr	Vista	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	None	None	Highly toxic to Eastern Oyster, high surface runoff potential
Fosamine	Krenite S	Tree and brush control in Zones 2 & 3	Selective broadleaf treatment	Effective broadleaf tree control without visual impacts	None	None
Glyphosate	Roundup Pro Razor Pro Buccaneer Aquaneat Rodeo Aquamaster	Zone 1, spot spray around shrub and tree plantings, aquatic weed control (Rodeo, Aquamaster)	Nonselective control of all vegetation	Rodeo, Aquamaster and Aquaneat are approved for use in or over water. Aquatic versions of glyphosate products are approved for use with NPDES permit.	None	None
Imazapyr	Arsenal Habitat	Zone 1	Pre and post-emergent non-selective control of all vegetation	Habitat is an aquatic version of Arsenal - good alternative to glyphosate in certain cases	None	High surface runoff potential, potentially mobile in soil if rain is possible.
Isoxaben	Gallery 75DF	Turf & Ornamental	Pre-emergent weed control in ground cover beds	Works well by itself or with Ronstar	Restricted for use within 60' of all water	High surface runoff potential
Metsulfuron-methyl	Escort XP Metsulfuron Methyl 60 DF	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf and conifer treatment	None	None	None
Norflurazon	Predict	Zone 1	Pre-emergent Weed control in Zone 1 and ground cover beds	Good Zone 1 product but may be difficult to keep in suspension	Restricted for use within 60' of all water	High surface runoff potential
Oryzalin	Oryzalin A.S. Surflan A.S	Zone 1 Ornamental planting beds	Pre-emergent Weed control in Zone 1 and ground cover beds	Product requires additional rinsing to thoroughly remove residues from empty container	Restricted for use within 60' of all water	Highly toxic to fish
Oxadiazon	Ronstar G Ronstar WSP	Turf & Ornamental	Pre-emergent weed control in ground cover beds	Works well by itself or with Gallery	Restricted for use within 60' of all water, gardens, plants bearing edible fruit	Highly toxic to fish
Pendimethalin	Pendulum 2G Pendulum Aqua	Zone 1 Turf & Ornamental	Nonselective Pre-emergent grass and weed control	None	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly toxic to fish, high potential for loss on eroded soil
Picloram	Tordon	Noxious and nuisance weed control, Zones 2 and 3	Selective broadleaf treatment	Highly effective for conifer and broadleaf weed control in Eastern Washington	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	Highly mobile in soil and readily adsorbed through roots of desirable trees
Pyraflufen	Edict	Noxious and nuisance weed control, Zones 2 and 3	2,-4-D substitute, effective on Kochia, Russian thistle	Effective with Roundup for Kochia control	Restricted for use within 60' of all water	Irreversible eye damage, highly toxic to Rainbow Trout
Sulfentrazone	Portfolio	Zone 1	Nonselective pre-emergent grass and weed control	New product available for use in 2006	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	High surface runoff potential, potentially mobile in soil if rain is possible.
Sulfometuron-methyl	Oust Landmark XP	Zone 1	Nonselective pre/post emergent grass and weed control	Landmark is premixed with Telar	None	None
Tebuthiuron	Spike 80DF	Zone 1	Nonselective pre-emergent grass and weed control	None	Westside - Restricted for use Eastside - Restricted for use within 60' of all water	High surface runoff potential, potentially mobile in soil if rain is possible.
Triclopyr Amine	Garlon 3A	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	None	None	Irreversible eye damage
Triclopyr Ester	Garlon 4 Crossbow Pathfinder	Noxious and nuisance weed control, and tree and brush control, Zones 2 and 3	Selective broadleaf treatment	Works well for invert applications. Crossbow is premixed with 2,4-D, Pathfinder with clopyralid	Restricted for use within 60' of all water	Highly toxic to fish



Appendix C:

Southwest Region Area 3
Zone 1 Maintenance
Map 1 of 1

2009

Designated for control in SW area 3:
(Pacific, Lewis, and Wahkiakum County)

Gorse/
Ulex europaeus

Japanese Knotweed/
Polygonum cuspidatum

Tansy Ragwort/
Senecio jacobaea

Nuisance weeds in SW area 3:
(Pacific, Lewis, and Wahkiakum County)

Bull Thistle/
Cirsium vulgare

Canada Thistle/
Cirsium arvense

Common Tansy/
Tanacetum vulgare

Himalayan Blackberry/
Rubus discolor

Poison Hemlock/
Conium maculatum

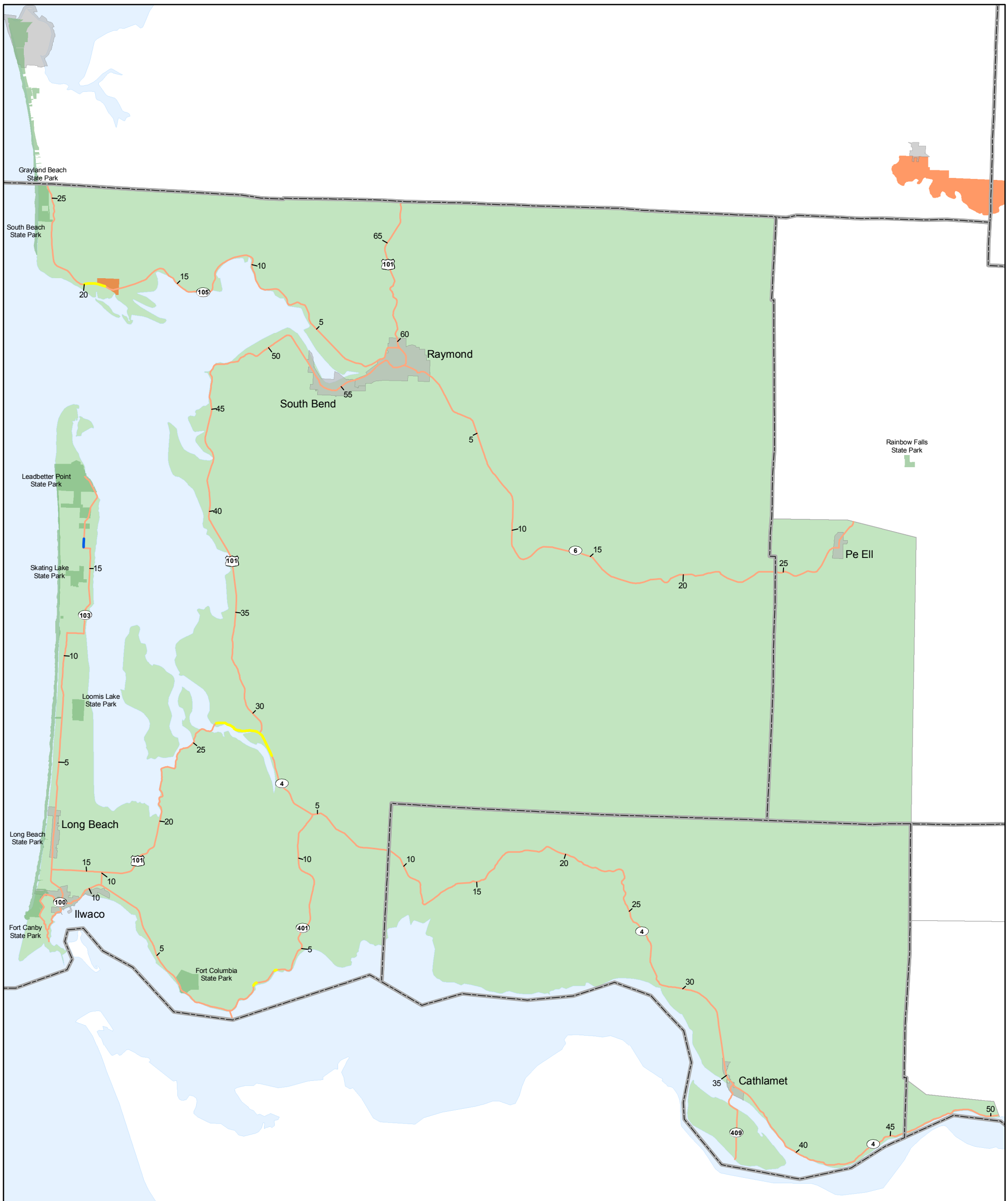
Scotch Broom/
Cytisus scoparius

Nuisance weeds in SW area 3:
(Pacific, Lewis, and Wahkiakum County)

St. Johnswort/
Hypericum perforatum

Wild Chervil/
Anthriscus sylvestris

Mullein/
Verbascum thapsus



Appendix D:

Southwest Region Area 3
Noxious Weed Locations
Map 1 of 1

2009

Table 3.0

Locations are distinguished between the sides of the highway by right shoulder (RS) or left shoulder/median (LS) in relation to either increasing (INC) mile markers or decreasing (DEC) mile markers

Description - Brief explanation of special treatment required

SR	Direction	Shoulder	BEG MP	END MP	Type	Description
004	INC	RS	0	1.2	Japanese Knotweed	IVM Treatment
004	DEC	RS	10.9	10.89	Wetland Mitigation	Deep River - Scheduled for turnover to maintenance in 2008
004	Both	RS	18.4	18.6	No Spray	Neighbor maintain
004	Both	RS	34.97	35.54	City of Cathlamet	Maintained by city
004			4.94		O'Connor Stockpile	
004			19.60		Grays River Stockpile	
004			34.87		Elochoman River pit	
004			47.64		Mill Creek Disposal	
006	Both	RS	0.00	1.37	City of Raymond	Maintained by city
006	Both	RS	28.06	28.94	City of Pe Ell	Maintained by city
006			20.05		Pluvius Stockpile	
006			26.25		McCormick Stockpile	
100	INC	RS	3.06	3.07	Wetland Mitigation	Ilwaco - Currently in process for turnover to maintenance this year
100	Both	RS	0.00	0.23	City of Ilwaco	Maintained by city
100	Both	RS	4.02	4.68	City of Ilwaco	Maintained by city
101	INC	RS	26.70	28.80	Japanese Knotweed	IVM Treatment
101	INC	RS	43.63	43.64	Wetland Mitigation	Niawiakum River - Scheduled for turnover to maintenance in 2008
101	DEC	RS	21.24	21.23	Wetland Mitigation	Willapa Bay - Scheduled for turnover to maintenance in 2008
101	DEC	RS	42.37	42.36	Wetland Mitigation	Palix River - Scheduled for turnover to maintenance in 2008
101	Both	RS	10.96	12.23	City of Ilwaco	Maintained by city
101	Both	RS	52.97	55.73	City of South Bend	Maintained by city
101	Both	RS	55.73	56.71	City of Raymond	Maintained by city
101	Both	RS	56.96	60.15	City of Raymond	Maintained by city
101			18.64		Bear River Br. Stockpile	
101			26.20		Old Naselle Stockpile	
101			32.18		South Nemah Stockpile	
101			33.80		Middle Nemah R. Pit	
101			35.00		Neman Stockpile	
101			61.27		Walch Rd. Stockpile	
103	DEC	RS	16.30	16.70	Gorse	IVM Treatment
103	Both	RS	0.57	2.94	City of Long Beach	Maintained by city

Table 3.0

Locations are distinguished between the sides of the highway by right shoulder (RS) or left shoulder/median (LS) in relation to either increasing (INC) mile markers or decreasing (DEC) mile markers

Description - Brief explanation of special treatment required

SR	Direction	Shoulder	BEG MP	END MP	Type	Description
103			3.48		Golf Course Stockpile	
105	Both	RS	0.00	0.56	City of Raymond	Maintained by city
105	Both	RS	18.30	19.37	Shoalwater Indian Reservation	Herbicide use only after consultation and approval by tribe
105	Both	RS	19.00	20.00	Japanese Knotweed	IVM Treatment
105			10.30		Smith Cr. Quarry	
105			13.41		Shoalwater Bay Pit	
105			20.14		Tokeland Disposal	
105	INC	RS	5.21	5.24	Guardrail post trimming	Underwhacker
105	INC	RS	6.89	7.00	Guardrail post trimming	Underwhacker
105	INC	RS	7.55	7.63	Guardrail post trimming	Underwhacker
401	INC	RS	1.80	2.00	Japanese Knotweed	IVM Treatment
401	INC	RS	3.10	3.20	Japanese Knotweed	IVM Treatment
401	Both	RS	0.90	1.16	Rest Area	
401			7.08		Bean Cr. Stockpile	
401			8.95		Cement Cr. Disposal	
409	Both	RS	3.07	3.84	City of Cathlamet	Maintained by city

Washington State Department of Transportation

Integrated Vegetation Management Record

Org Code	County	Date		Vegetation Management Zone(s)
		6/13/2007		☐ Zone 1 ☐ Zone 2 ☐ Zone 3

Area
SR. _____ MP _____ to MP _____ Location

Check Appropriate Boxes: ☐ NB ☐ EB ☐ SB ☐ WB ☐ Roadside ☐ Shoulder ☐ Median ☐ Landscaped Area ☐ Rest Area ☐ Park-n-Ride ☐ Interchange ☐ Bridge ☐ Ramp ☐ Mitigation Site ☐ Stormwater ☐ Yard/Stockpile Third Party Damage ☐ Yes Sensitive Sites ☐ Aquatic ☐ Wetlands

Target ☐ Noxious Weeds ☐ Nuisance Weeds ☐ Brush/Trees ☐ Hazard Tree ☐ Other List Target/Species: _____

Reason for Action:
☐ Noxious Weeds ☐ Nuisance Weeds ☐ Fire Prevention ☐ Restore Native Veg. ☐ Zone 1 Pilot ☐ Aesthetic
☐ Site Distance ☐ Hazard Vegetation ☐ Customer Request ☐ Enhance Vegetation ☐ Slope Stabilization ☐ Other _____

Long term IVM plan (Describe goals/objectives and a step-by-step approach over time)

Approximate Acres to Accomplish

Activities		Planned date of Treatment	Actual date of Treatment
Manual	☐ Digging ☐ Pulling ☐ Planting ☐ Lopping ☐ Scalping ☐ Other _____		
Mechanical	☐ Axial Saw Work ☐ Tractor Brush Cutter ☐ Mower/Chain ☐ Manual Brush Cutting ☐ Tractor Mower ☐ Other		
Bio-Control	☐ Insects ☐ Pathogens ☐ Parasites Type/Species _____		
Cultural	☐ Burning ☐ Grading ☐ Seeding ☐ Fertilizing ☐ Grazing ☐ Soil Amendment ☐ Other _____		
Chemical	Record Number		

#1 Evaluation and Date

#2 Evaluation and Date

#3 Evaluation and Date

Washington State Department of Transportation

Pesticide Application

Org. Code	County	Date of Application	Start / Finish	ICP	Stores Issue Ticket Number(s)
		6/13/2007	○ AM ○ PM / ○ AM ○ PM		

Area
SR ☐ MP ☐ to MP ☐ and MP ☐ to MP ☐ and MP ☐ to MP ☐ and MP ☐ to MP ☐

Check Appropriate Boxes:
☐ NB ☐ EB ☐ SB ☐ WB
☐ Roadside ☐ Shoulder ☐ Median ☐ Landscaped Area ☐ Rest Area ☐ Park-n-Ride ☐ Interchange ☐ Bridge ☐ Ramp ☐ Yard/Stockpile
☐ Spot Spray ☐ Blanket Spray
☐ Aquatic ☐ Wetlands

☐ Weeds ☐ Noxious Weeds ☐ Disease ☐ Brush ☐ Insects ☐ Other
Zone 1 ○ yes ○ no
List Pest(s):

Start Weather Conditions
Temperature ☐ °F (°C) Wind (Direction From) ☐ Wind (Range) ☐ mph(km/h)
○ Sunny ○ Broken ○ Overcast No Rain ○ Light Scattered Showers ○ Hard Showers

Finish Weather Conditions
Temperature ☐ °F (°C) Wind (Direction From) ☐ Wind (Range) ☐ mph(km/h)
○ Sunny ○ Broken ○ Overcast No Rain ○ Light Scattered Showers ○ Hard Showers

Tank No.	Material Name	Material Type	EPA Reg. No.	Lot Number	Product Per Acre (hectare)	Unit	Total Daily Usage	Unit

Total ☐ **Acres(hectares) Treated at** ☐ **gallons(liters) of spray per acre(hectare).**

Equipment Number	Tank Size 1	2	3	4	5	Calibration Date	Vehicle Speed mph(km/h)	Nozzle Pressure PSI(kPa)	Width of Spray Pattern Feet(meter)
	☐	☐	☐	☐	☐		☐	☐	☐

☐ Hand/spreader ☐ Backpack ☐ Hand gun ☐ Fixed Nozzle ☐ Boom ☐ Other (Specify) ☐
☐ Tank Mix (Conc.) ☐ Injection ☐ Invert

Operator Name	Operator Pesticide License No.	Operator Signature	Driver Name

Remarks

Buffer Area Driver's Name

Pesticide Sensitivity Registration Applies: ☐ Yes ☐ No

Contact

Division of Emergency Management (1-800-258-5990) Additional Notes

DOT Form 540-506 EF Revised 1/2007 Distribution: O/C Maint. Operator Region File
Send OSC Copy Within 5 Days

Osl= Ounces Dry Lb= Pound Osl= Ounces Liquid Ga= Gallon Pt= Pint Qt= Quart
g= gram kg=kilogram ml=Milliliter L= Liter

Entity	Mailing Address	Contact Person	Title	Phone	E-Mail
Pacific County Vegetation Management	P.O. Box 88 South Bend, WA 98586	Tim Crose	Director	(360) 875-9425	tcrose@pacific.wa.us
Wahkiakum County Noxious Weed Board	25 River St. Cathlamet, WA 98612	Bob Brons	Coordinator	(360) 795-3852	bronsb@co.wahkiakum.wa.us
Lewis County Noxious Weed Board	351 NW North St. Chehalis, WA 98532-1900	Bill Wamsley	Coordinator	(360) 740-1215 Fax: (360) 740-2792	wamsleyb@wsu.edu
Cowliitz County Noxious Weed Board	207 4th Ave. N #101 Kelso, WA 98626	Kenneth C. Stone	Director of Public Works	(360) 577-3030 Fax:(360) 676-0845	stonek@co.cowlitz.wa.us
City of Raymond	300 First St. Raymond, WA 98577	M. Dean Parsons	Public Works Director	(360) 942-4107	deanparsons@willapabay.org
City of South Bend	P.O. Box 9 South Bend, WA 98586-0009	Steve Russell	Public Works Engineer	(360) 875-5571	sbcity@techline.com
City of Long Beach	115 Bolstad Ave. West Long Beach, WA 98631	Mike Kitzman	Parks Supervisor	(360) 642-4421 Fax: (360) 642-8841	parks@longbeachwa.gov
City of Cathlamet	100 Maint St. Cathlamet, WA 98612	David Vik	Field Supervisor	(360) 795-3203 Fax: (360) 795-8500	
City of Ilwaco	P.0. Box 548 Iiwaco, WA 98624			(360) 642-3145 Fax: (360) 642-3155	info@ilwacowashington.com
Willapa National Wildlife Refuge	3888 State Route 101 Ilwaco, Wa 98612-9707	Charlie S.		(360) 484-3482	charlie_stenvall@fws.gov
Julia Butler Hansen National Wildlife Refuge	P.O. Box 566 Cathlamet, WA 98612			(360) 795-3915	
Shoalwater Indian Tribe	2373 Tokeland Rd. Tokeland, WA 98590			1-800-633-5218	webmaster@shaowaterbay-nsn.gov